M.Sc. IN BIOLOGICAL SCIENCES

Admission Requirements

The basic admission requirement is a B.Sc. Biology (honors or equivalent) or sufficiently high standing to indicate a potential for success in biological research.

Applicants are encouraged to visit or correspond with those faculty members in whose areas they are interested.

Application Deadline

Applications should be received by June 30. Later applications will be considered if there is still space in the program.

Financial Assistance

Assistance is available for qualified candidates in the form of teaching assistantships paying from $2,750 to $5,500 per year which may be combined with scholarships, fellowships or research grant salary to provide a maximum annual income of $9,000. A number of university fellowships in the amount of $6,500 are also available. Qualified candidates should request and complete application forms for fellowships before February 1, and for assistantships prior to September 1. Qualified students are also encouraged to apply for Natural Sciences and Engineering Research Council fellowships and Québec resident students for *Bourses d'etudes et de perfectionnement de l'enseignement supérieur.*

Research Facilities

The Department of Biological Sciences is equipped for research in six principal areas:

1. Animal Physiology
2. Aquatic Toxicology
3. Cell Biology
4. Ecology
5. Microbiology
6. Plant Physiology and Biochemistry.

Research Opportunities

Animal Physiology

P.J. Albert, Insect sense organs, structure and function and electrophysiological studies.

N.N. Kapoor, Osmoregulation and respiration in aquatic insects. Studies on the transporting epithelia and Na + – K + activated ATPase in the osmoregulatory tissues.

R.M. Roy, Modification of physiological and genetic effects of ionizing radiation by tocopherol.

Aquatic Toxicology

P.D. Anderson, Environmental toxicology with emphasis on aquatic organisms and multiple toxicity, developmental, physiological and biochemical adaptations in fish.

G. Leduc, Fish toxicology, laboratory investigations of physiological responses of fish to chronic exposure to toxicants, mode of action and modifying factors of toxicity.

S.M. Ruby, Laboratory studies in fish reproduction following chronic exposure to toxicants.

Ecology

D. Fairbairn, Ecological genetics and population ecology; gene flow, dispersal, and population structure in semi-aquatic and terrestrial insect population; production and population dynamics of zooplankton.

E. Maly, Zooplankton competition and predation, invertebrate and algal population distribution and abundance.

C.F. MacLeod, Population studies of vertebrates with emphasis on reproductive behaviour and distribution in small mammals.

J.D. McLaughlin, Ecology, biology, pathogenesis and systematics of waterfowl helminths, host-parasite responses of larval helhinths and crustaceans.

P. Widden, Effects of crude oil on arctic soil fungi. Study of competition between soil fungal populations. Taxonomy and ecology of *Trichoderma.*

Cell Biology

R.T. Chronin, Investigation of somatic reduction of polyploid complexes in epithelium of hindgut of pupa of mosquito *Aedes aegypti* (L).

K.S. Dhindsa, Histochemistry, experimental biology, effect of drugs on cellular metabolism and histogenesis of organ systems.

H.E. Enesco, Studies of cell proliferation, cell aging and cell responses to environmental stress.

R. Germinario, Investigations into the regulation of sugar metabolism, hormone responsiveness and cell proliferation in ageing cultured human cells.

J.A. Kornblatt, Biochemical and biophysical studies on the mechanism of energy production of mitochondria.

R. Storms, Molecular biology and molecular genetics of gene regulation in *Saccharomyces cerevisiae.*

Microbiology

M.B. Herrington, Genetics and biochemistry of protein synthesis in *E. coli.*

D. Kluepfel, Microbial metabolism biosynthesis of natural products, biodegradation and bioconversion, isolation of secondary metabolites and antibiotics.

E.B. Newman, Intermediary metabolism and its control in bacteria with particular reference to serine, glycine C-1 and nitrogen metabolism, applications of microbiology to energy resource management and single-cell protein.

S. Sehgal, Isolation and characterization of new antibiotics, their mode of action and biosynthesis, bioconversion of organic compounds.

K. Singh, Antibiotics isolation and mode of action; bioconversions of steroids and antibiotics study of microbial enzymes, isolation and purification of gonadotropins.

Plant Physiology and Biochemistry

S.S. Ashtakala, Physiological and biochemical effects of selected pesticides (herbicides and insecticides), in plants with particular reference to nitrogen metabolism. Their fate, behavior and mode of action.

R.K. Ibrahim, Productivity of secondary metabolites in intact tissues and in tissue and cell cultures, isolation and identification of metabolites, purification properties and subcellular localization of the enzymes of phenolic metabolism.

S. Mangat, The physiology and biochemistry of plants under stress, particular emphasis on nucleotide and carbohydrate metabolism.

Information

For further information and application forms, write to:

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